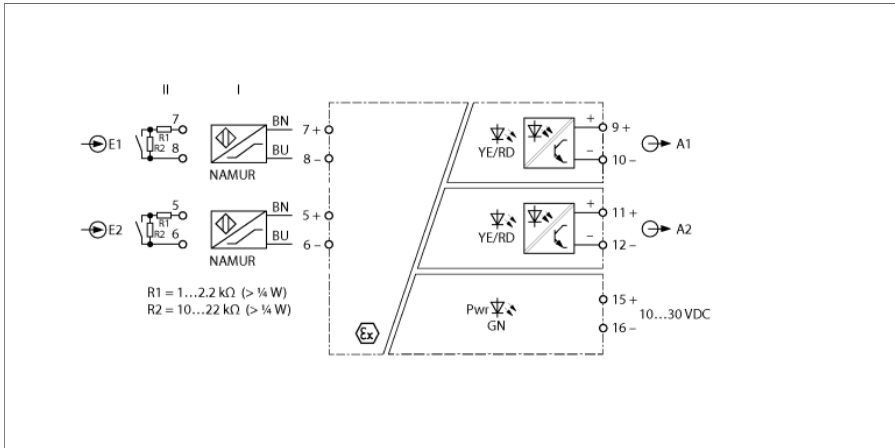


# Isolating switching amplifier 2-channel IMX12-DI01-2S-2T-0/24VDC



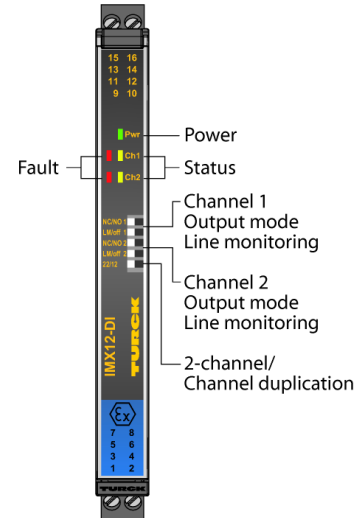
Sensors according to EN 60947-5-6 (NAMUR) or potential-free contacts can be connected to the IMX12-DI01-2S-2T-0/24VDC isolating switching amplifier. The device is equipped with intrinsically safe input circuits and can be installed in zone 2. A DIP switch on the device allows to toggle between 2-channel or 1-channel operating mode with signal doubling. The output circuits are equipped with two potential-free transistors with high cut-off frequency (10 kHz). The device complies with the requirements of the NE21.

The devices feature DIP switches on the front. This allows to select between the output mode, the input circuit monitoring, as well as to toggle between signal duplication and 1-channel operation. When using mechanical contacts, either line monitoring must be switched off or the contact must be wired with resistors (see wiring diagram).

The green LED indicates operational readiness. An error in the input circuit causes the red LED to flash according to NE44. Then, the transistor of the corresponding output circuit locks.

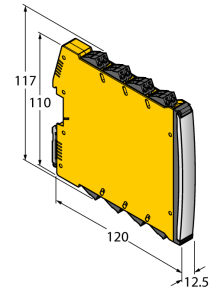
The device can be used in safety circuits up to SIL2 (high and low demand according to IEC 61508).

The device is equipped with removable screw terminals.



- 2 transistor outputs ( $\leq 10\text{kHz}$ )
- Switchable: 2-channel or signal doubling
- Output mode adjustable (NO/NC mode)
- Input circuits monitored for wire-break/short-circuit (ON/OFF switchable)
- Complete galvanic isolation
- Input reverse-polarity protected
- Removable screw terminals
- ATEX, IECEx, NEPSI, cUL, cFM, IN-METRO, Kosha, TIIS, TR CU EAC, DNV, GL
- Installation in zone 2
- SIL 2

## Dimensions



|  |   |
|--|---|
| Type   | IMX12-DI01-2S-2T-0/24VDC  |
| ID   | 7580020   |
| <b>Nominal voltage</b> 24 VDC  |   |
| <b>Operating voltage</b> 10...30 VDC   |   |
| <b>Power consumption</b> ≤ 0.8 W   |   |
| <b>Power dissipation, typical</b> ≤ 0.64 W   |   |
| <b>Input</b> 2-channel or 1-channel with signal doubling   |   |
| <b>NAMUR input</b>   |   |
| NAMUR  | EN 60947-5-6  |
| Input circuit monitoring   | on/off switchable   |
| No-load voltage  | 8.2 VDC   |
| Short-circuit current  | 8.2 mA  |
| Input resistance   | 1 kΩ  |
| Cable resistance   | ≤ 50 Ω  |
| Switch-on threshold  | 1.75 mA   |
| Switch-off threshold   | 1.55 mA   |
| Wire breakage threshold  | ≤ 0.06 mA   |
| Short-circuit threshold  | ≥ 6.4 mA  |
| <b>Output circuits</b>   |   |
| <b>Semiconductor output circuit(s)</b>   |   |
| Output circuits (digital)  | 2 x transistor (potential-free, short-circuit proof)  |
| Switching voltage  | ≤ 30 VDC  |
| Switching current per output   | ≤ 0.1 A   |
| Switching frequency  | ≤ 10000 Hz  |
| Voltage drop   | ≤ 1.1 V at 20 mA, ≤ 1.8 V at 50 mA, ≤ 2.7 V at 100 mA   |
| <b>Galvanic isolation</b>  |   |
| Test voltage   | 2.5 kV RMS  |
| Input 1 to output 1  | 375 V peak value acc. to EN 60079-11  |
| Input 2 to output 2  | 375 V peak value acc. to EN 60079-11  |
| Input 1 to supply  | 375 V peak value acc. to EN 60079-11  |
| Input 2 to supply  | 375 V peak value acc. to EN 60079-11  |
| Output 1 to supply   | 100 V RMS acc. to EN 50178 and EN 61010-1   |
| Output 2 to supply   | 100 V RMS acc. to EN 50178 and EN 61010-1   |
| Output 1 to output 2   | 100 V RMS acc. to EN 50178 and EN 61010-1   |
| <b>Important note</b>  |   |
| For Ex-applications the values specified in the corresponding Ex certificates (ATEX, IECEx, UL, etc.) apply. |   |
| Ex approval acc. to conformity certificate   | TÜV 14 ATEX 147004 X  |
| Application area   | II (1) G, II (1) D  |
| Ignition protection category   | [Ex ia Ga] IIC; [Ex ia Da] IIIC   |
| Application area   | II 3 (1) G  |
| Ignition protection type   | Ex nA [ia Ga] IIC T4 Gc   |
| Important note   | If the device is used in applications to achieve functional safety according to IEC 61508, the safety manual must be used. Information in the data sheet are not valid for functional safety. |
| Use in SIL safety circuits   | SIL 2 acc. to IEC 61508   |
| <b>Displays/Operating elements</b>   |   |
| Operational readiness  | Green   |
| Switching state  | Yellow  |
| Error indication   | red   |

| Mechanical data                  |  |                              |                  |
|----------------------------------|--|------------------------------|------------------|
| Protection class                 | IP20                                     |                              |                  |
| Flammability class acc. to UL 94 | V-0                                      |                              |                  |
| Ambient temperature              | -25...+70 °C                             |                              |                  |
| Storage temperature              | -40...+80 °C                             |                              |                  |
| Dimensions                       | 120 x 12.5 x 117 mm                      |                              |                  |
| Weight                           | 157 g                                    |                              |                  |
| Mounting instructions            | DIN rail (NS35)                          |                              |                  |
| Housing material                 | Polycarbonate/ABS                        |                              |                  |
| Electrical connection            | Removable screw terminals, 2-pin         |                              |                  |
| Terminal cross-section           | 0.2...2.5 mm <sup>2</sup> (AWG: 24...14) |                              |                  |
| Tightening torque                | 0.5 Nm                                   |                              |                  |
| Tightening torque                | 4.43 LBS-Inch                            |                              |                  |
| Environmental conditions         | Operating height                         | Up to 2000 m above sea level |                  |
|                                  | Pollution degree                         | II                           |                  |
|                                  | Surge/Overvoltage category               | II (EN 61010-1)              |                  |
|                                  | Standards used                           |                              |                  |
|                                  | Voltage resistance and insulation        |                              | EN 50178         |
|                                  |  |                              | EN 61010-1       |
|                                  |  |                              | EN 50155         |
|                                  |  |                              | GL VI-7-2        |
|                                  |  |                              |                  |
|                                  | Shock                                    |                              | EN 61373 class B |
|                                  |  |                              | EN 50155         |
|                                  |  |                              | GL VI-7-2        |
|                                  |  |                              | EN 60068-2-6     |
|                                  |  |                              | EN 60068-2-27    |
|                                  | Temperature                              |                              | EN 60068-2-1 Ad  |
|                                  |  |                              | EN 50155         |
|                                  |  |                              | GL VI-7-2        |
|                                  |  |                              | EN 60068-2-2 Bd  |
|                                  |  |                              | EN 60068-2-1     |
|                                  | Air humidity                             |                              |                  |
|                                  |  |                              | EN 60068-2-38    |
|                                  | EMC                                      |                              | EN 50155         |
|                                  |  |                              | GL VI-7-2        |
|                                  |  |                              | NE21             |
|                                  |  |                              | EN 61326-1       |
|                                  |  |                              | EN 61326-3-1     |
|                                  |  |                              | EN 61000-4-2     |
|                                  |  | EN 61000-4-3                 |                  |
|                                  |  | EN 61000-4-4                 |                  |
|                                  |  | EN 61000-4-5                 |                  |
|                                  |  | EN 61000-4-6                 |                  |
|                                  |  | EN 61000-4-11                |                  |
|                                  |  | EN 61000-4-29                |                  |
|                                  |  | EN 55011                     |                  |
|                                  |  | EN 55016                     |                  |
|                                  | EN 50121-3-2                             |                              |                  |
|                                  | EN 61000-6-2                             |                              |                  |

## Accessories

| Type code                 | Ident no. |   | Dimension drawing |
|---------------------------|-----------|---|-------------------|
| WM1 WIDER-<br>STANDSMODUL | 0912101   | The resistor module WM1 meets the requirements for line monitoring between a mechanical contact and a TURCK signal processor. The input circuit of the signal processor is designed for sensors acc. to EN60947-5-6 (NAMUR) and equipped with a wire-break and short-circuit monitoring function. |                   |
| IMX12-SC-2X-4BK           | 7580940   | Screw terminals for IM(X)12 modules; included in delivery: 4 pcs. of 2-pin black terminals  |                   |
| IMX12-SC-2X-4BU           | 7580941   | Screw terminals for IM(X) 12 modules; included in delivery: 4 pcs. of 2-pin blue terminals  |                   |
| IMX12-CC-2X-4BK           | 7580942   | Spring terminals for IM(X)12 modules; included in delivery: 4 pcs. black terminals, 2-pin   |                   |
| IMX12-CC-2X-4BU           | 7580943   | Spring terminals for IM(X)12 modules; included in delivery: 4 pcs. blue terminals, 2-pin  |                   |